## REMARKS

In the Office Action dated August 17, 2004, the Information Disclosure Statement was objected to; the specification and claims were objected to; claims 1, 3-5, 7, 8, 12, 16, 17, and 19-22 were rejected under 35 U.S.C. § 102(e) over U.S. Patent 6,195,760 (Chung); claims 2 and 18 were rejected under § 103 over Chung in view of U.S. Patent No. 6,684,346 (Tu); claims 23-25 were rejected under § 103 over Chung in view of Tu and U.S. Patent No. 6,247,143 (Williams); claim 11 was rejected under § 103 over Chung in view of Williams; claims 9 and 10 were rejected under § 103 over Chung in view of U.S. Patent No. 6,263,452 (Jewett); claim 6 was rejected under § 103 over Chung in view of U.S. Patent Application Publication No. 2003/0061530 (Hayden); claims 13 and 14 were rejected under § 103 over Chung in view of "official notice"; and claim 15 was rejected under § 103 over Chung in view of "official notice."

INFORMATION DISCLOSURE STATEMENT

A date-stamped postcard is attached to establish receipt of the Information Disclosure Statement reference by the U.S. Patent & Trademark Office. The Information Disclosure Statement, along with the one reference, was submitted with the filing of the present application on January 24, 2002.

A copy of the original Information Disclosure Statement, along with the reference, is also attached to this Reply. It is respectfully requested that the Examiner acknowledge consideration of the Information Disclosure Statement reference on the attached form PTO-1449.

OBJECTIONS TO SPECIFICATION AND CLAIMS

The specification and claims have been amended to address the objections raised by the Office Action.

REJECTIONS OF CLAIMS UNDER 35 U.S.C. §§ 102 AND 103

Claim 1 has been amended to recite that the predetermined number of duplicate and primary processes are in *a* computer, in contrast to the provision of primary and backup application modules on multiple host computers in the networked environment disclosed by Chung. As depicted in Fig. 1, and described in columns 3 and 4, of Chung, a primary copy of an application module runs on one host computer, while backup application modules reside "on at least one of the other host computers in an idle state awaiting later execution, or are running as a [sic] backup copies or second primary copies of application modules." Chung, 4:10-15. Chung's fault-tolerant mechanism is focused on replication for "distributed applications in a network" (see Title of Chung). As further stated by Chung "[r]eplication of the application module on other host computers in the network is a well-known technique that can be used to improve reliability and availability of the application module." Chung, 1:33-35. The provision of application modules on multiple host computers enables fail-over from the application module in one host computer to a backup application module in another host computer on the network. *See* Chung, 5:8-20 (describing two solutions of migrating from one host computer to another host computer in response to failure of an application module).

Therefore, Chung does not disclose a method for memory failure recovery in *a* computer, that comprises maintaining a predetermined number of duplicate and primary processes *in the computer*, keeping the processes (in the computer) in synchronization, managing the processes (in the computer) so that a single process image is presented to an external environment, and detecting a computer exception which affects one of the processes (in the computer). In view of the foregoing, it is respectfully submitted that claim 1 is not anticipated by Chung.

Independent claim 17 is similarly allowable over Chung, which does not disclose a computer-usable medium embodying computer program code for commanding a computer to perform memory failure recovery comprising: maintaining a predetermined number of duplicate and primary processes (*in the computer*), keeping the processes (in the computer) in synchronization, managing the processes (in the computer) so that a single process image is presented to an external environment, and detecting a computer system exception which affects one of the processes (in the computer).

Independent claim 22 is allowable over Chung for similar reasons.

Dependent claims 2-14, 18-21, 26, and 29 are allowable over Chung for at least the same reasons as corresponding independent claims 1 and 17.

Moreover, with respect to claim 3 (which depends from claim 1), Chung does not disclose allocating a new memory space in memory hardware in *the* computer to each of the duplicate processes, which is separate from a memory space *in the memory hardware* allocated to the primary process. In the networked environment of Chung, the memory space allocated to each application module on the different host computers *cannot* be part of the memory hardware of the same computer.

Claim 19, which depends from claim 17, is allowable over Chung for reasons similar to those for claim 3.

Independent claim 15 was rejected as being obvious over Chung in view of "official notice." The Office Action conceded that Chung does not disclose that the managing element includes permitting only one of the processes to perform a system call to an external environment. 8/17/2004 Office Action at 21. However, the Examiner took official notice that such a system call would have been well known in the art. Applicant respectfully challenges the taking of official notice with respect to claim 15. As stated by the M.P.E.P., "[o]fficial notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known." M.P.E.P. § 2144.03 (8th ed., Rev. 2), at 2100-136. Applicant respectfully submits that the element of claim 15 at issue, "permitting only one of the processes to perform a system call to an external environment," is not of such "instant and unquestionable demonstration as being well-known." If a reference exists that teaches or suggests a modification of Chung to add the last element of claim 15, then Applicant respectfully requests production of such a reference. Absent this reference, it is respectfully submitted that a *prima facie* case has not been established with respect to claim 15 (and its dependent claims 27 and 28).

The obviousness rejection of dependent claim 13 and 14 (which depend from claim 1) over Chung and "official notice" is similarly defective.

Independent claim 23 was rejected as being obvious over Chung, Williams and Tu. It is respectfully submitted that a *prima facie* case of obviousness has not been established with respect to claim 23 for at least two reasons: (1) there existed no motivation or suggestion to combine the reference teachings; and (2) even if the teachings of Chung, Williams, and Tu are combined, the hypothetical combination of such references does not teach or suggest *all* of the claimed elements. *See* M.P.E.P. § 2143, at 2100-129.

Point (2) is addressed first. Note that claim 23 recites an operating system for receiving an exception signal, *terminating the affected primary process*, and maintaining a predetermined number of primary and duplicate processes. The Office Action stated that "a step of terminating a process is inherently included in a step of restarting a process." 8/17/2004 Office Action at 11 (citing column 2, lines 39-41, and column 3, lines 24-31, of Chung). Applicant respectfully disagrees with this statement. The watchdog daemon described in Chung is able to detect that a host computer has crashed or has hung. However, there is absolutely no mention whatsoever that the watchdog daemon performs the termination of an application module. *See* Chung, 7:35-63. In Chung, it is assumed that the entire host computer on which the primary application module was running has crashed or hung – therefore, there is no need for the watchdog daemon to terminate the affected application module. Furthermore, attempting to restart an application module is not the same as terminating the application module. In fact, restarting an application module is the opposite of terminating the application module.

A further defect of the obviousness rejection is the statement that "it is inherent that there be an operating system present for performing these functions." 8/17/2004 Office Action at 11. Chung describes watchdog daemons for performing various tasks – there is no indication whatsoever that these watchdog daemons are part of the operating system. "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is *necessarily* present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" M.P.E.P. § 2112, at 2100-55.

The Office Action has failed to establish that the watchdog daemons are necessarily part of an operating system – therefore, the Office Action has failed to establish that Chung teaches an operating system to perform the tasks recited in claim 23. None of the other references, Williams or Tu, teaches an operating system for receiving an exception signal, terminating the affected primary process, and maintaining a predetermined number of primary and duplicate processes. Therefore, the hypothetical combination of Chung, Williams, and Tu fails to teach or suggest all elements of claim 23. A *prima facie* case fails for at least this reason.

Furthermore, there simply did not exist any motivation or suggestion to combine at least the teachings of Chung and Williams. As discussed above, Chung relates to a networked environment in which backup copies of an application module are kept on separate host computers. Fail-over can occur from one host computer to another host computer in response to detection of failure of one of the host computers. The Office Action conceded that Chung fails to teach a synchronization buffer for keeping the duplicate process in synchronization with this primary process. 8/17/2004 Office Action at 11. However, the Office Action relied upon Williams as teaching this feature. It is respectfully submitted that there existed no motivation or suggestion to incorporate the buffers described in the multiprocessor computer system of Williams into the Chung networked environment.

It is well established law that "[t]he mere fact that the prior art could be so modified would not have made the modification **obvious** unless the prior art suggested the **desirability** of the modification." *In re Gordon,* 733 F.2d 900, 902, 221 U.S.P.Q. 1125 (Fed. Cir. 1984) (emphasis added). As the Federal Circuit has stated, "virtually all [inventions] are combinations of old elements." *In re Rouffet*, 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453 (Fed. Cir. 1998). "Most, if not all, inventions are combinations and mostly of old elements." *Id.*

> Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be 'an illogical and inappropriate process by which to determine patentability.'

*Id.*

There is absolutely no need to employ the buffering mechanism in a multiprocessor system described in Williams for synchronizing application modules running on multiple host computers described in Chung. The buffering mechanism described in Williams enables interaction among the multiple processors of the multiprocessing system of Williams. However, there is no desirability to apply such a buffering mechanism to a networked environment having multiple host computers, as described in Chung. In view of the foregoing, it is respectfully submitted that there existed no motivation to combine the teachings of Chung and Williams. Therefore, a *prima facie* case of obviousness over Chung, Williams, and Tu has not been established.

Dependent claims 24, 25, and 30 are allowable for at least the same reasons as claim 23.

In view of the foregoing, allowance of all claims is respectfully requested. The Commissioner is authorized to charge any additional fees and/or credit any overpayment to Deposit Account No. 08-2025 (10010858-1).

Respectfully submitted,

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